

## PATENT COOPERATION TREATY

## PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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International application No. PCT/IL04/00420	International filing date (day/month/year) 18 May 2004 (18.05.2004)	Priority date (day/month/year)	
International Patent Classification (IPC) or national classification and IPC IPC: <b>G06Q 40/00</b> (2006.01) USPC: 705/40,30,32			
Applicant MTS MER TELEMAGEMENT SOLUTIONS LTD.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>8</u> sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 06 December 2005 (06.12.2005)		Date of completion of this report 04 October 2007 (04.10.2007)	
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer Ryan Zeender Telephone No. 571-272-3600	

Form PCT/IPEA/409 (cover sheet)(April 2005)

**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4(a))
- ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished
- ☒ the description:  
pages 1-22 as originally filed/furnished  
pages\* NONE received by this Authority on \_\_\_\_\_  
pages\* NONE received by this Authority on \_\_\_\_\_
- ☒ the claims:  
pages NONE as originally filed/furnished  
pages\* 23-30 as amended (together with any statement) under Article 19  
pages\* NONE received by this Authority on \_\_\_\_\_  
pages\* NONE received by this Authority on \_\_\_\_\_
- ☒ the drawings:  
pages 1/6-6/6 as originally filed/furnished  
pages\* NONE received by this Authority on \_\_\_\_\_  
pages\* NONE received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/IL04/00420**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims <u>1-39</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>1-39</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	Claims <u>1-39</u>	YES
	Claims <u>NONE</u>	NO

**2. Citations and Explanations (Rule 70.7)**

Claims 1-39 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the limitation of generating difference indicators and merging the comparison bill and the difference indicators into a verification bill in the bill verification device, as independent claims 1 and 29 recite.

Claims 1-39 meet the criteria set out in PCT Article 33(4) and thus have industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----

# CLAIMS

## I/WE CLAIM:

1. In a communications and computing environment an apparatus for verifying an at least one service bill issued to an at least one subscriber by a service provider, the apparatus comprising the elements of:

an at least one user device associated with the at least one subscriber, for generating an at least one user data record describing an at least one usage unit of a service provided by the service provider;

an at least one bill verification device for receiving and storing bill calculation and bill generation information from the at least one user device and from an at least one service provider, and for calculating and generating an at least one comparison bill, to compare with the at least one service usage bill issued by the service provider; wherein the results of the comparison in the bill verification device generate difference indicators, which indicate differences between the comparison bill and the service usage bill issued by the service provider; and wherein the difference indicators are merged into the comparison bill to form a verification bill, which is provided by the at least one bill verification device.

2. The apparatus of claim 1 wherein the at least one user device is a mobile telephone communication device.

3. The apparatus of claim 2 wherein the at least one user device is a communications-enabled Personal Digital Assistance device.

4. The apparatus of claim 3 wherein the at least one user device is an enhanced credit card having dynamic data storage capabilities.

5. The apparatus of claim 1 wherein the at least one user device comprises the elements of:

a service handler component for initiating and for performing service usage, for generating an at least one service usage unit

associated with the service usage, and for storing the at least one service usage unit;

a service usage log file held in an internal memory device of the at least one user device and coupled to the service handler component for storing service usage information generated via service usage;

a user data record builder component coupled to a service usage log file for creating an at least one user data record based on the service usage file and carrying information based on an at least one least usage unit of a service provided by the service provider;

a user data records file held in the internal memory device of the at least one user device and coupled to the user data record builder component for storing the at least one user data record generated by the user data record builder component;

a transmission scheduler component coupled to a user interface for receiving and for holding transmission scheduling control information and for activating a user data record transmission process by sending activation commands in response to transmission scheduling control information;

a user data records transmitter component coupled to a communications device for transmitting user data records to a bill verification device in response to the activation commands received from the transmission scheduler component.

6. The apparatus of claim 5 wherein the at least one user device further comprises a user interface for enabling communication between the at least one user device and an at least one subscriber operating the at least one user device.

7. The apparatus of claim 1 wherein the at least one bill verification device comprises the elements of:

a user data records database held in an internal memory device of the at least one bill verification device for storing user data records transmitted from the at least one user device;

5 a service provider billing system rules file for storing billing system rules obtained by the at least one bill verification device from the at least one service provider device;

a service provider billing system subscriber service contract file for storing subscriber contract information obtained by the at least one bill verification device from the at least one service provider device;

10 a subscriber rules and subscriber group rules file for holding subscriber-specific and subscriber-group-specific control data;

a service usage bill issued by the service provider billing system device;

15 a bill and subscriber processor component for calculating and generating a comparison bill and for processing subscriber and subscriber group control information;

a bill comparator component to compare between the comparison bill and the service usage bill issued by the service provider billing system;

20 a billing difference and subscriber and subscriber group rule based indicators formatter component for formatting the results generated by the bill and subscriber processor component and the bill comparator component;

25 a merger component for merging the difference indicators and the subscriber and the subscriber group rule based indicators into the comparison bill and for generating a verification bill resulting from the merging process;

30 a verification bill for displaying the detailed billing charges information calculated internally, the difference indicators between the comparison bill and the bill issued by the service provider billing

system, and the subscriber and the subscriber group rule-based indicators.

8. The apparatus of claim 7 wherein the at least one bill verification device further comprises the elements of:

5 a subscriber rules-based and subscriber group rules-based actions table for storing rules-based actions to be performed in response to the identification of post-billing conditions defined by the combination of rules, counter values and limitation values;

10 a subscriber control file for storing subscriber counters and subscriber limitations;

a subscriber control file updater for updating subscriber counters in response to results generated by the bill and subscriber processor component;

15 a verification bill router component for routing the verification bill to an at least one pre-defined subscriber.

9. The apparatus of claim 1 wherein the at least one subscriber is a network-based service subscriber.

10. The apparatus of claim 1 wherein the at least one service provider is a network-based service provider.

20 11. The apparatus of claim 1 wherein the at least one service provider is a Mobile Communications Service Provider.

12. The apparatus of claim 11 wherein the at least one service provider is a credit-based purchasing and payment service provider.

25 13. The apparatus of claim 1 wherein the service provided by the at least one service provider to the at least one subscriber is a mobile telephone communication service.

30 14. The apparatus of claim 13 wherein the service provided by the at least one service provider to the at least one subscriber is a goods or services purchasing service associated with credit accounts and credit cards.

15. The apparatus of claim 1 wherein the at least one bill verification device is a bill verification server installed on a computing platform linked to the communications network.

16. The apparatus of claim 1 further comprises the elements of:

5 a service provider device linked to the communication network, for responding to service requests submitted by the at least one user device, for managing and maintaining service usage associated with the submitted requests, for generating call data records associated with service usage units, and for transmitting accumulated call data records for service usage bill generation;

10 a service provider billing system coupled to the service provider device for storing subscriber contract information, for storing service provider rules, for calculating and generating service usage bills, and for responding to requests submitted by the at least one bill verification device by transmitting subscriber contract information and service provider rules information to the at least one bill verification device.

17. The apparatus of claim 16 wherein the service provider device is a mobile network switch device.

18. The apparatus of claim 17 wherein the service provider device is a credit card authorization, credit card authentication, and credit-based transaction clearance device.

19. The apparatus of claim 18 wherein the service provider billing system is a billing system installed on a computing platform.

20. The apparatus of claim 1 wherein the at least one user data record comprises:

25 a user device identification field for identifying the at least one user device and the associated at least one subscriber;

30 a service type indicator field to identify the type of service associated with the usage unit reflected by content of the at least user data record;



a length of use field for providing calculation-specific information to the bill and subscriber processor component;

a service provider identification field for building communication address to the service provider device and for connecting the contract and service provider information to the bill and subscriber processor component; and

a date and time field for user data record identification and for date and time dependent calculations.

21. The apparatus of claim 1 wherein the at least one user device is connectable to a communications network.

22. The apparatus of claim 1 wherein the at least one user device transmits the at least one user data records for bill verification.

23. The apparatus of claim 1 wherein the at least one bill verification device is linked to a communication network.

24. The apparatus of claim 1 wherein the at least one service provider device is linked to a communications network.

25. The apparatus of claim 1 wherein the at least one bill verification device locates potential differences between the at least one comparison bill and the at least one service usage bill.

26. The apparatus of any claims 2, 3 or 4 wherein the communications network is a mobile telephone communications network.

27 The apparatus of claim 26 wherein the communications network is a data communications network.

28. The apparatus of claim 27 wherein the communications network is a credit network.

29. In a communications and computing environment a method for verifying an at least one service usage bill associated with a service and issued to an at least one subscriber by a service provider, the method comprising the steps of:

building an at least one user data record in an at least one user device, the content of the record reflecting an at least one usage unit associated with a service provided by the service provider;

transmitting the at least one user data record to the at least one bill verification device from the at least one user device;

obtaining an at least one service usage bill from a service provider billing system in the at least one bill verification device;

requesting and receiving service usage bill calculation and bill generation control data from the service provider billing system in the at least one bill verification device;

generating a comparison bill based on the bill calculation and generation control data in the at least one bill verification device;

comparing the comparison bill with the service usage bill in the at least one bill verification device;

determining differences between the comparison bill and the service usage bill in the at least one bill verification device; and

generating difference indicators and merge the comparison bill and the difference indicators into a verification bill in the at least one bill verification device.

30. The method of claim 29 further comprises activating a data transmission process via a scheduling component or via a manual mechanism for providing periodic user data record transmission from the at least one user device to the at least one bill verification device.

31. The method of claim 29 further comprises generating a service usage log file in the at least one user device in response to service usage.

32. The method of claim 29 further comprises the steps of:

reading the subscriber rules, the subscriber group rules, the subscriber counter values and the subscriber limitation data in the at least one bill verification device;

processing the subscriber rules, the subscriber group rules in association with the subscriber counter information, the subscriber limitation information, and the comparison bill data in the at least one bill verification device; and

5 generating subscriber and subscriber group rule-specific action indicators based on the rule-based actions in the at least one bill verification device.

33. The method of claim 29 further comprises routing the verification bill to an at least one subscriber in the at least one bill verification device.

10 34. The method of claim 29 further comprises updating subscriber counters and subscriber limitation data based on the content of the comparison bill in the at least one bill verification device.

15 35. The method of claim 29 wherein the service provided by the service provider is a mobile telephone communication service.

36. The method of claim 29 wherein the at least one user data record is generated in response to the performance of incoming calls, outgoing calls, SMS message transmission, credit card transactions, and data communications network access.

20 37. The method of claim 36 wherein the at least one user data record transmitted from the at least one user device to the at least one bill verification device via SMS messages.

25 38. The method of claim 37 wherein the at least one user data record is transmitted from the at least one user device to the at least one bill verification device via infra-red links.

39. The method of claim 38 wherein the at least one user data record is transmitted from the at least one user device to the at least one bill verification device via a credit card reading device linked communicatively to the at least one bill verification device.